Updated SSC / HOP Productivity and Guidelines

Part I: Improving SSC communication effectiveness
Part II: Improving HOP program productivity

Sabrina Savage

Part I

Improving SSC communication effectiveness

Objectives

1. Determine a more consistent and effective method to communicate the SSC monthly recommendations to the COs.
   a. Response to flare targets.
   b. Focused Mode priorities.

1. Determine appropriate targets for Quiet Sun campaigns.
   - Base on historical HOP effectiveness.

1. Effective communication from SSC

a. Responding to Flare Targets

- Revisit guidelines for implementation by Chief Observers (COs) and Chief Planners (CPs).
  - This was handled by the SWG in 2011.
    - Guidelines not effectively followed recently due to new COs, more active conditions, etc.

Hinode Flare Watches

CO HOP override discretion:

•http://www.isas.jaxa.jp/home/solar/guidance/node12.html

•"The Hinode SWG has reviewed the processes and procedures for flare observations based on the issuance of a Max Millennium Flare Watch (MMFW) as well as the productivity of Hinode Observation Programs (HOPs). The SWG has made two decisions regarding these observing programs."

•"First, regions with the potential to create flare will be given the highest observing priority. The target for the observations may utilize the MMFW target designation or Hinode will begin instituting a "Hinode Flare Watch" that may be called by the Chief Planner, Toshi Shimizu, Taro Sakao, or a designate of the Science Schedule Committee. The target for the Hinode Flare watch will be selected at that time, and the instruments will follow that target using approved flare watch programs. Any HOPs not completed as the result of a flare watch will be rescheduled, if possible, and the contact for the HOP will be notified of the change in plan as soon as possible after the issuance of the Hinode Flare watch. Synoptic observations (including synoptic HOPs) should be completed as scheduled or as soon as possible after the end of the flare watch. The SWG will assess success of this new policy at the August 2012 SWG meeting."

Hinode Flare Watches

CO HOP override discretion:

- http://www.isas.jaxa.jp/home/solar/guidance/node11.html

- "The Chief Planner and Chief Observers may also suspend normal HOP support if a sufficiently interesting target of opportunity (TOO) for an identified TOO HOP appears. Such targets might be a flaring active region that does not quite meet the standards for a major flare alert, a newly emerging active region, a large filament or prominence, etc. Factors to be considered in making this decision in the daily meeting include: uniqueness and priority of the normally scheduled observations, frequency of occurrence of similar TOOs, weather and seeing conditions at ground based observatories, availability of telemetry, length of time the TOO HOP has been waiting to be run, etc. When this decision is made, the COs should explain the reasons for the changes in their daily plan announcements and should refer questions about the plan to the SSCs and Pis."

Hinode Flare Watches

CO HOP override discretion:

- Precedent for previous usage

daily note

* First pass is early today (15:59 JST) *

* Region near E limb just produced an M flare. Hinode Flare Watch called based on this, as it is impossible to see magnetic complexity level of the region at this time. Various HOPs postponed. *

Hinode Flare Watches

Implementation Suggestions

1.[Action: SSC] Create a Flare Watchdog ToO HOP that is the "Go-to" program for all instruments when active region monitoring is not currently planned.

- Perhaps determine what this would look like in 4-1.
  - How best to implement flare trigger across instruments?

2.[Action: SSC] SSC designate a [rotating?] "Flare Watchdog" to monitor solar conditions and HOP coordination to determine if any HOPs need to be postponed for active region monitoring.

- If planned HOPs are already monitoring the active region, no need to postpone.
- Otherwise, after consulting with Instrument PIs, either provide new pointing for a scheduled AR HOP or call for Flare Watch HOP to be run.
  - Directly contact COs.

Hinode Flare Watches

- Contact information (email/phone) for all COs must be easily and quickly retrievable.
- The Flare Watchdog HOP must be well advertised, especially in the event of an update.
- While COs and CP still have the option to override HOPs themselves, this adds extra support and confirmation.

1. Effective communication from SSC

b. Communicating Focused Mode Priorities

- SSC has created a list of these priorities based on solar conditions; however, Operators felt they were not effectively communicated.

- From May SSC Notes:
  1. Active Region
  2. Coronal Hole
  3. Filament/Prominence

  4. [Action: SSC] Need to include QS priorties

Target Prioritization

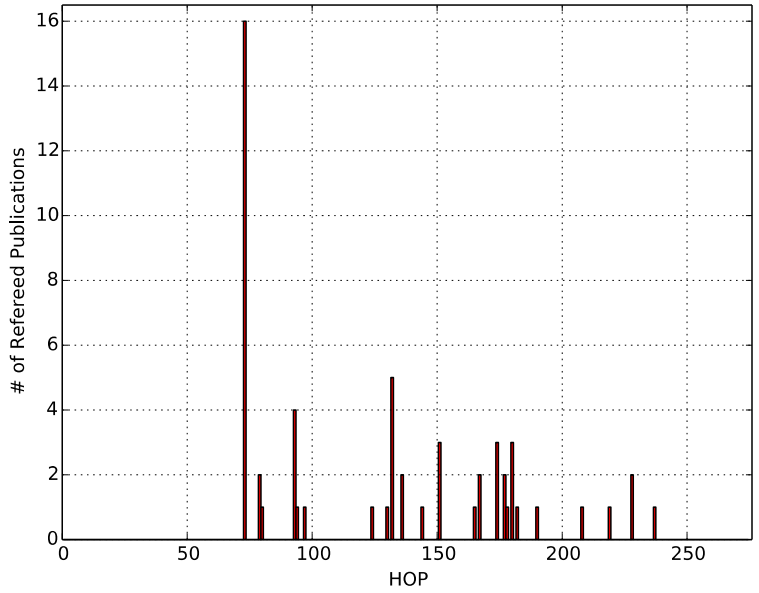
Suggested Solution

1.[Action: Instrument PIs/PSs] Distribute the list with the weekly transition notes as a separate notice (so that it gets extra attention).

2.[Action: SSC] SSC designate a [rotating?] "Focused Mode Lead" to monitor solar conditions, attend the weekly meeting, and provide guidance based on SSC recommendations.

2. Quiet Sun Campaigns

- Foreshadowing Part II (HOP Program Assessment)
  - Some of the most productive QS campaigns are HOPs 73, 130, and 151.



  - Long-term synoptic scans and monitoring
  - FM allows effective long baseline campaigns that were previously difficult to implement.

This HOP has been very successful, except for the fact that we were unable to complete the planned 40 hours of continuous monitoring of the quiet Sun. HOP 151 gathered a unique dataset in terms of sensitivity, duration and cadence. It remains unique, since no similar observations have been performed so far.

Focused Mode Prioritization

Suggested Priority List:

1. Active Region
   - Long-term programs such as flux emergence, waves in sunspots, flare monitoring, etc.]
2. Coronal Hole
3. Prominence/Filament
4. Disk-center, long baseline synoptics/scans
5. Polar magnetic network

Part II

Improving the HOP program productivity

Objectives

1. **Assess the productivity of the HOP program.**
   - **Determine the best type of HOPs for Focused Mode Ops.**
2. **Revisit guidelines for HOP approval by the Science Steering Committee (SSC).**
   - **Provide information to assess value of proposed HOPs and productivity of frequent proposers.**
3. **Review scheduling procedures.**
4. **Present science highlights.**

HOP Productivity Assessment: Procedure

- **Information Gathering**
  - Initial inquiries for HOP productivity sent out in May.
    - [HOPs 72 – 242]
    - Feedback retrieved and sorted.
    - Will implement a more automated process to request updated information in the future on a biannual basis.

- Received info on ~50 HOPs (~30%)

HOP Productivity Assessment: Procedure

HOP info

BER OF IRIES SENT	NUMBER OF INQUIRIES RECEIVED	HOP NUMBER	HOP TITLE	TOO	CORE	NUMBER OF RUNS	DATES	PRIMARY PROPOSER	CO-PROPOSERS	SCC CONTACT	PRIMARY PROPOSER
						AS OF 3/6/14					
		1	APL Solar Bolometric Imager (BSI)	NO	NO	1	2007	Bernasconi		Berger	berger [at] lmsal.com
		2	CORE: Polar Region Observation Campaign	NO	YES	2	Jan-07; Sep-07	Cirtain	XRT Team	Cirtain	jonathan.w.cirtain [at
		3	EIS-SUMER Campaign	NO	NO	1	Apr-07	W. Curdt		Culhane	curdt [at] linmpi.mpg
		4	Coordinated Campaign Observation with THEMIS - a. Filament/prominence study; b. Evolving 3D Magnetic Field in Active Regions	NO	NO	1	Apr-07	Schmieder; Aulanier		Golub	brigitte.schmieder [a
		5	Irradiance Measurement Campaign	NO	NO	1	Feb-07	Berger			berger [at] lmsal.com
		6	CORE: Coalignment Campaign	NO	YES	6	Nov-08; Feb-07; Mar-07; May-07	Shimizu	Katsukawa; Ichimoto; Hara	Shimizu	shimuzu [at] solar.isa
		7	CDS/UVCS + Ulysses Campaign	NO	NO	2	May-07	Del Zanna		Culhane	g.del-zanna [at] dam
		8	Stereoscopic Observation of the Coronal Structures	NO	NO	1	May-07	Plunkett		Mariska	simon.plunkett [at] n
		9	Observations of Filament Threads and their Footpoints	NO	NO	1	Apr-07	Engvold		Berger	oengvold [at] astro.u
			CORE: Joint Observation of the Solar Corona between Hinode EIS and NAOJ								

Proposer info

PROPOSER	FIRST NAME	HOP(s) [co]	EMAIL	ALTERNATIVE EMAIL	INVALID EMAIL
Abramenko		[90]; 198; [208]	avi [at] bbso.njit.edu		
Aime		[143]; [239]			
Anjali		[206]; [240]			
Antolin	Patrick	234; 248; 262	patrick.antolin [at] nao.ac.jp		patrick.antolin [at] wis.kuleuven.be
Anzer		[186]			
Arnaud		[143]			
Asai		[189]			
Asensio Ramos		[213]			
Attie		[86]			
Attrill		123	gattrill [at] cfa.harvard.edu		
Aulanier		[111]			
Bai		[259]			
Baker	Deborah	[84]; 253	deborah.baker [at] ucl.ac.uk		db2 [at] mssl.ucl.ac.uk
Balmaceda		[185]	lbalmaceda [at] icate-conicet.gob.ar		
Balthasar		190	hbalthasar [at] aip.de		
Bando		[122]			

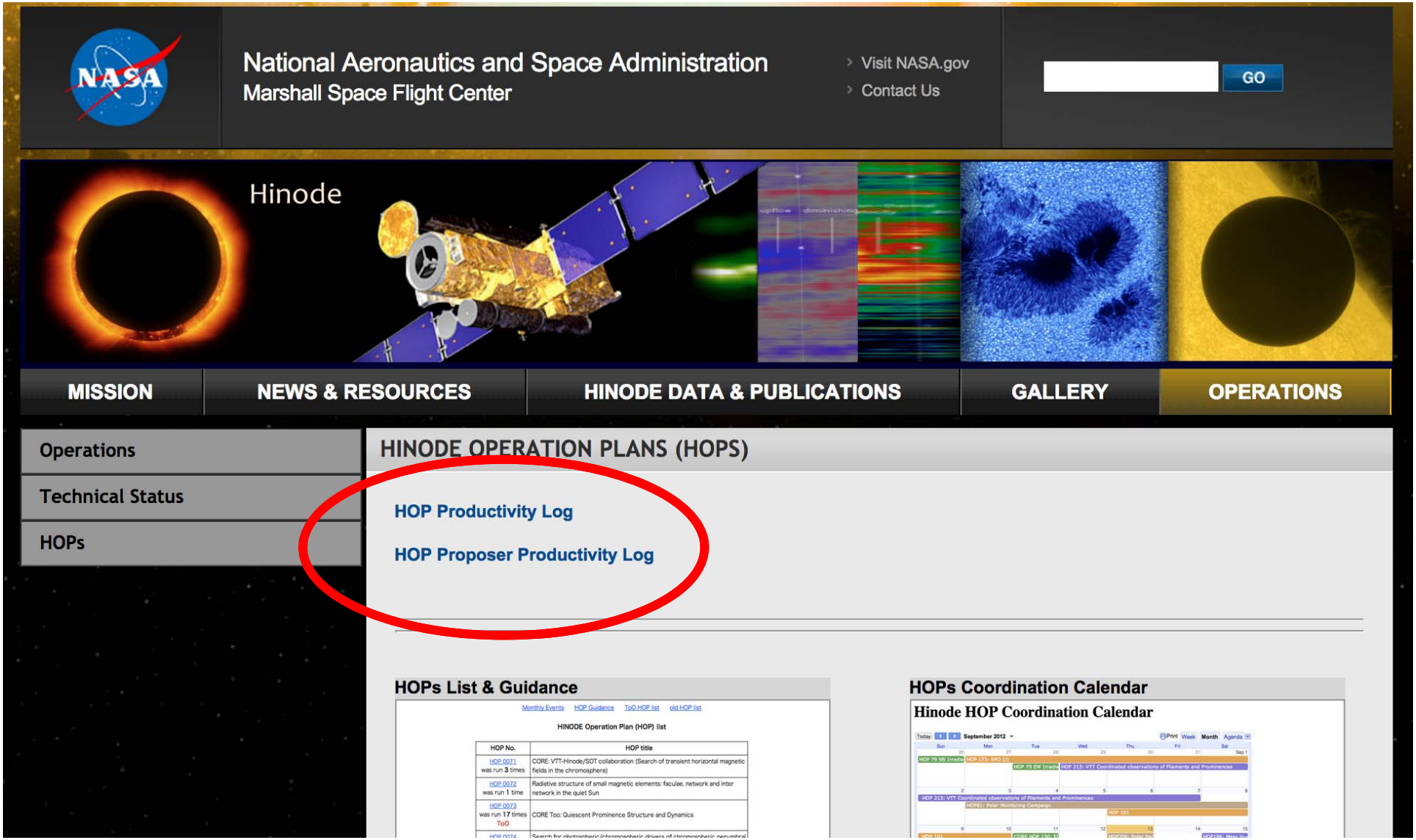
Automated Script

HOP output

HOP Number	Target	Quality	Instruments Used	Productivity (HTML)	Number of Refereed Publications	Refereed Year(s)	Number of Non-refereed Publications	Non-refereed Year(s)	Number of EPO Activities	EPO Year(s)	Number of other outputs	Other Year(s)	Reason for Lack of Productivity	Additional Comments
172				EPO: Yaji, 2014, "Hinode Education and Outreach Activities in Recent Years and in Future", Highlights of Astronomy, Vol. 15, XXVIIIth IAU General Assembly Yaji 2014, "Let's Observe the Sun with Hinode! - Coordinated Observation Campaign with High School Students", Japan Geoscience Union Meeting 2014, Yokohama, Japan Yaji 2013, "Let's Look at the Sun with Hinode together!", 2013, The Astronomical Herald, 106, 503 Yaji 2013, "Communicating Solar Observations among Amateurs, Educators, Professionals and the Public", Communicating Astronomy with the Public 2013, Warsaw, Poland Yaji 2013, "Coordinated observations for High School Students as Hinode EPO Activity", Hinode-7 Science Meeting, Takayama, Japan Yaji 2013, "You are a Solar Physicist today - Analysis and Practices with Hinode data", Astronomical Society of Japan, Annual Spring Meeting, Saitama, Japan Yaji 2012, "Let's Look at the Sun with Hinode together! - EPO Joint Observations for High school Students", 6th Hinode Science Meeting, St. Andrews, UK Yaji 2012, "Hinode Education and Outreach Activities in Recent Years and in the Future", IAU XXXVIII General Assembly, Beijing, China 						2014; 2014; 2013; 2013; 2013; 2013; 2012; 2012; 2012; 2011; 2011; 2010; 2010				An article about HOP173 observations was published in the Japanese astronomical magazine "Hoshi Navi" to the public. This summer joint observation is also introduced in the magazine. Participating Public Venues: Kishiwada High School Urawa Nishi High School Keio Gijuku High School Maibara High School Saitama University, Department of Education Hyogo Univ. High School Hiroshima Shuyo High School Hiroshima Johoku High School Koabayashi Nishi High School Nishi-harima Observatory Kawaguchi Science Museum Others
173	Active Region; Prominence; Flare	Good	SOT/BFI; XRT; [Ground-based]: School Observatories - white light, H-alpha, CaK	Yaji 2012, "Use with Archive Data Joint-Observed by High					14					
174	Active Region; Emerging Flux; Ellerman Bombs	Good		REFEREED PUBLICATION(S): Long et al. 2013, Solar Phys., 288, 567. Harra et al. 2011, ApJ, 737, L4. Veronig et al. 2011, ApJ, 743, L10. 	3	2011; 2011; 2013								
175														
176														

HOP Productivity Assessment: Outputs

http://hinode.msfc.nasa.gov/hops.html



HOP Productivity Assessment: Outputs

Questions / Comments: sabrina.savage [at] nasa.gov

HOP INSTRUCTION PAGE

HOP Productivity Log

Log reliant on proposer-provided information and is therefore not complete.
Please contact sabrina.savage [at] nasa.gov to have any information updated.

115 Total Productivity Outputs	Histogram Per Year	Histogram Per HOP
57 Refereed Publications	Histogram Per Year	Histogram Per HOP
6 Non-refereed Publications	Histogram Per Year	Histogram Per HOP
36 EPO Activities	Histogram Per Year	Histogram Per HOP
16 Other Outputs	Histogram Per Year	Histogram Per HOP

****

HOP ####: [# Refereed Publications; # Non-refereed Publications; # EPO activities; # Other outputs] -- Total

** -- *Reason for lack of productivity noted (e.g., insufficient observations, PI relocation, etc.)*

HOP 0072: [0; 0; 0; 0] -- 0
HOP 0073: [16; 0; 1; 2] -- 19
HOP 0074: [0; 0; 0; 0] -- 0
HOP 0075: [0; 0; 0; 0] -- 0
HOP 0076: [0; 0; 0; 0] -- 0
HOP 0077: [0; 0; 0; 0] -- 0
HOP 0078: [0; 0; 0; 0] -- 0

HOP Productivity Assessment: Outputs

Questions / Comments: sabrina.savage [at] nasa.gov

HOP INSTRUCTION PAGE

HOP 73, TOO, CORE

CORE Too: Quiescent Prominence Structure and Dynamics

Number of runs (AS OF 3/6/14): 17

Dates: Sep-08; Oct-08; Apr-09; May-09; Apr-10; Jun-10

Primary Proposer(s):

Berger -- tberger [at] nso.edu

Co-proposer(s):

Y. Lin -- yong.lin [at] astro.uio.no

HOP Productivity:

REFEREED PUBLICATION(s):

Dudik et al. 2013
Hillier, A. et al. 2012, ApJ, 746, 120.
Hillier, A. et al. 2012, ApJ, 756, 110.
Hillier, A. et al. 2012, ApJ, 761, 106.
Berger, T. 2012, "The Prominence/Coronal Cavity System", PASP, 463, 147.
Berger, T. 2012, "Solar Promience fine structure and dynamics", IAUS 300 Proceedings, 15.
Berlicki et al. 2012.
Labrosse et al. 2012.
Parenti et al. 2012.
Hillier, A. et al. 2011, ApJ, 736, L1

HOP Productivity Assessment: Outputs

HOP list Monthly Events

HINODE Operation Plan (HOP) accepted on 24-Jul-08

HOP No.	HOP title
HOP 0073	CORE Too: Quiescent Prominence Structure and Dynamics

plan term	Too 2008/09/06-2008/09/19 2008/09/29-2008/09/29 2008/10/02-2008/10/02 2009/04/16-2009/04/16 2009/04/18-2009/04/18 2009/04/21-2009/04/21 2009/04/23-2009/04/23 2009/04/24-2009/04/24 2009/04/25-2009/04/25 2009/04/26-2009/04/26 2009/04/28-2009/04/28 2009/05/07-2009/05/14 2009/10/22-2009/10/22 2010/04/30-2010/05/06 2010/06/22-2010/06/22 2010/06/25-2010/06/25 2010/06/29-2010/06/29			
proposer	name :	Berger et al. Lin	e-mail :	berger[at]lmsal.com yong.lin[at]astro.uio.no
contact person in HINODE team	name :	Berger	e-mail :	berger[at]lmsal.com

Questions / Comments: sabrina.savage [at] nasa.gov

HOP INSTRUCTION PAGE

HOP Proposer: Berger

tberger [at] nso.edu

As Primary Proposer:

HOP 5:

No HOP productivity information provided.

HOP 16:

No HOP productivity information provided.

HOP 46:

No HOP productivity information provided.

HOP 56:

No HOP productivity information provided.

HOP 73:

REFEREED PUBLICATION

Dudik et al. 2013
Hillier, A. et al. 2012, ApJ, 746, 120.
Hillier, A. et al. 2012, ApJ, 756, 110.

Links to papers included when provided.

HOP Productivity Assessment: Outputs

** Indicates reason behind lack of productivity provided.

HOP 0091:	[0; 0; 0; 0] -- 0 **	Proposer left the field (Grigis).
HOP 0092:	[0; 0; 0; 0] -- 0	
HOP 0093:	[4; 0; 0; 0] -- 4	
HOP 0094:	[1; 0; 2; 0] -- 3	
HOP 0095:	[0; 0; 0; 0] -- 0	
HOP 0096:	[0; 0; 0; 0] -- 0	
HOP 0097:	[1; 0; 0; 0] -- 1	
HOP 0098:	[0; 0; 0; 0] -- 0	(Engineering Test) The one run of this HOP listed on the HOP pages did not actually run the SOT programs requested in the HOP proposal, nor was the target appropriate. So no good data was collected.
HOP 0099:	[0; 0; 0; 0] -- 0	
HOP 0100:	[0; 0; 0; 0] -- 0 **	
HOP 0101:	[0; 0; 0; 0] -- 0	
HOP 0102:	[0; 0; 0; 0] -- 0	
HOP 0103:	[0; 0; 0; 0] -- 0	
HOP 0104:	[0; 0; 0; 0] -- 0	
HOP 0105:	[0; 0; 0; 0] -- 0	
HOP 0106:	[0; 0; 0; 0] -- 0	
HOP 0107:	[0; 0; 0; 0] -- 0	
HOP 0108:	[0; 0; 0; 0] -- 0	
HOP 0109:	[0; 0; 0; 0] -- 0	
HOP 0110:	[0; 0; 0; 0] -- 0	
HOP 0111:	[0; 0; 0; 0] -- 0 **	QS conditions made it difficult to obtain the targets. Still working on the data.
HOP 0112:	[0; 0; 0; 0] -- 0	
HOP 0113:	[0; 0; 0; 0] -- 0	
HOP 0114:	[0; 0; 0; 4] -- 4	
HOP 0115:	[0; 0; 0; 0] -- 0	
HOP 0116:	[0; 0; 0; 0] -- 0 **	TESIS data was hard to reduce/obtain.
HOP 0117:	[0; 0; 0; 0] -- 0	
HOP 0118:	[0; 0; 0; 0] -- 0	
HOP 0119:	[0; 0; 0; 0] -- 0	
HOP 0120:	[0; 0; 0; 0] -- 0	
HOP 0121:	[0; 0; 0; 0] -- 0	
HOP 0122:	[0; 0; 0; 0] -- 0	
HOP 0123:	[0; 0; 0; 0] -- 0	
HOP 0124:	[1; 0; 0; 0] -- 1	Although this HOP run was successful from the Hinode-side, the primary scientific objectives could not be met because: (a) Clouds at the ground-based site partially obscured the planned polarization studies of light from the corona, and (b) no well-defined coronal cavities were visible in the corona during the time of the eclipse.
HOP 0125:	[0; 0; 0; 0] -- 0	
HOP 0126:	[0; 0; 0; 0] -- 0	
HOP 0127:	[0; 0; 0; 0] -- 0 **	

HOP Productivity Assessment: Outputs

Questions / Comments: sabrina.savage [at] nasa.gov

HOP INSTRUCTION PAGE

HOP Productivity Log

Log reliant on proposer-provided information and is therefore not complete.
Please contact sabrina.savage [at] nasa.gov to have any information updated.

115 Total Productivity Outputs	Histogram Per Year	Histogram Per HOP
57 Refereed Publications	Histogram Per Year	Histogram Per HOP
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HOP ####: [# Refereed Publications; # Non-refereed Publications; # EPO activities; # Other outputs] -- Total

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HOP 0072: [0; 0; 0; 0] -- 0
HOP 0073: [16; 0; 1; 2] -- 19
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HOP 0075: [0; 0; 0; 0] -- 0
HOP 0076: [0; 0; 0; 0] -- 0
HOP 0077: [0; 0; 0; 0] -- 0
HOP 0078: [0; 0; 0; 0] -- 0

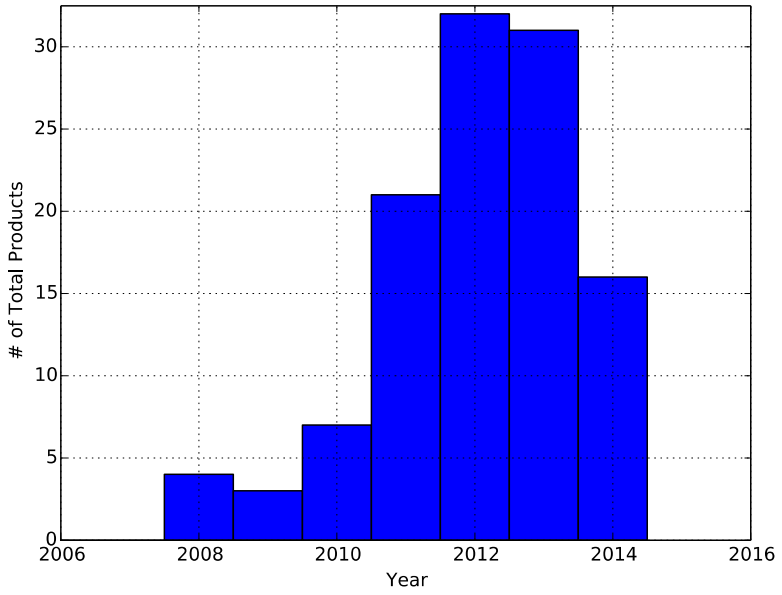
HOP Productivity Assessment: Outputs

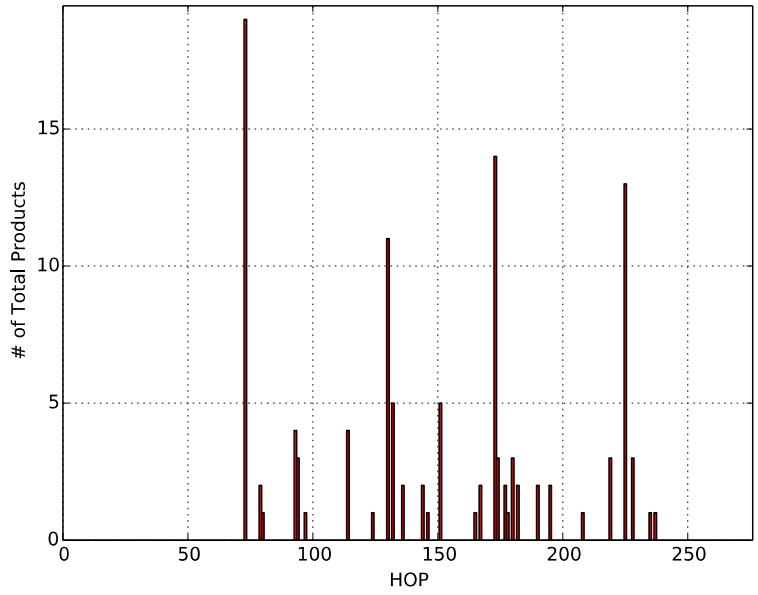
- **Caveats to keep in mind:**
  - About 1/3 responded.
    - Reliant on feedback from proposers (inherently incomplete).
  - Only up through HOP 242.
    - Does not include all of the IHOPs!
    - Does not include recent eclipse (lot of news articles)!
      - Will be part of next call.

HOP Productivity Assessment: Outputs

Total Outputs Per Year and Per HOP

- Refereed Publications, Non-refereed Publications, EPO, Other Outputs

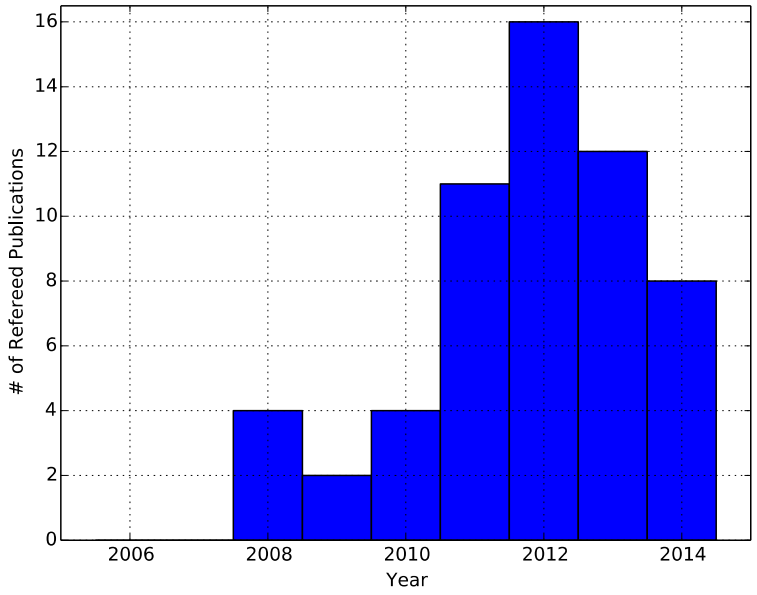


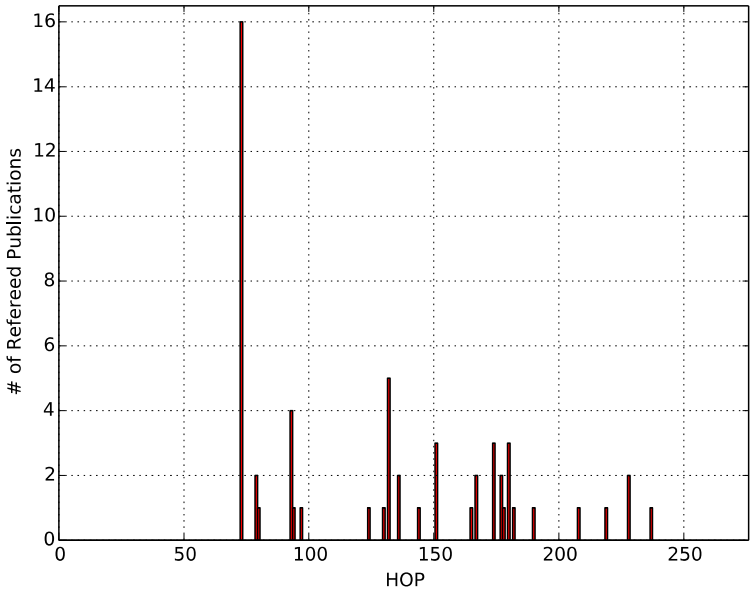


HOP Productivity Assessment: Outputs

Total Refereed Publications Per Year and Per HOP

- Star Performers: HOP 73, HOP 130 – long term campaigns

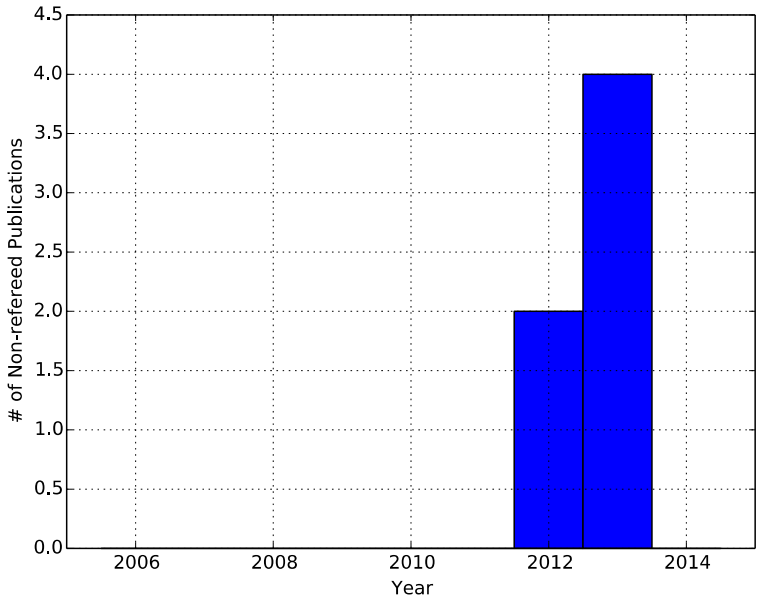


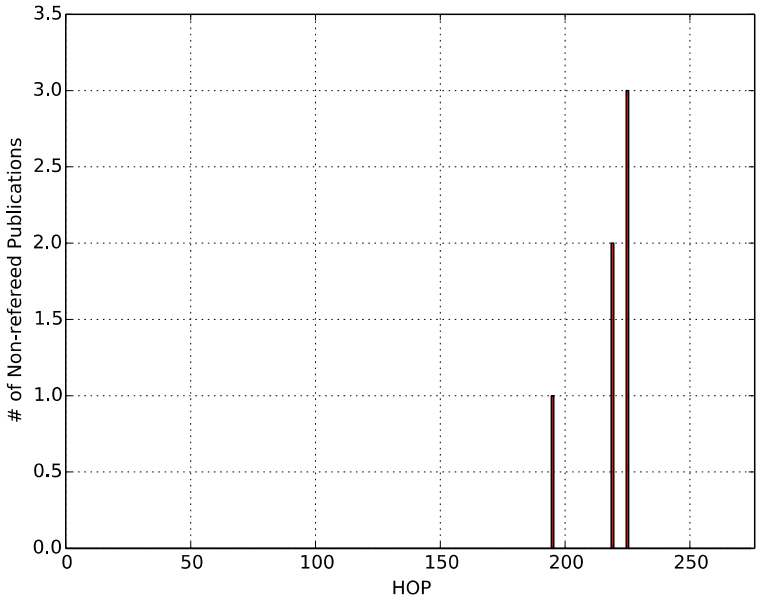


HOP Productivity Assessment: Outputs

Total Non-refereed Publications Per Year and Per HOP

- e.g., magazine/news articles

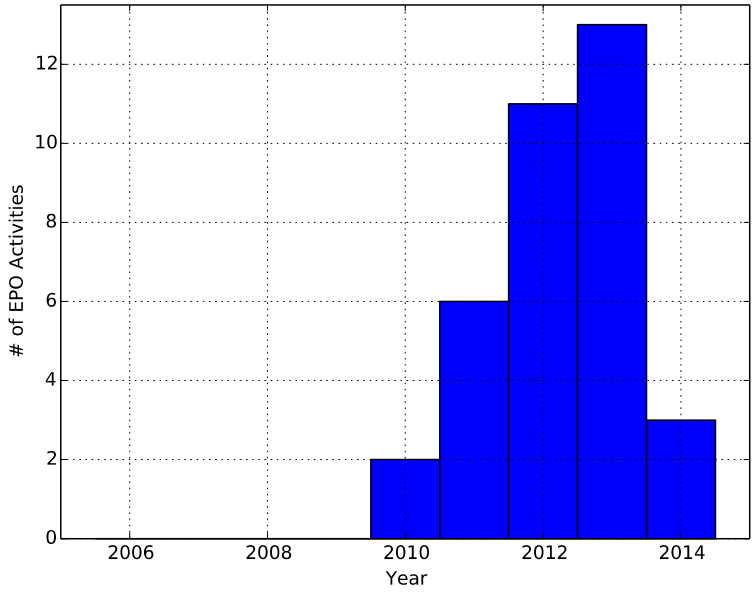


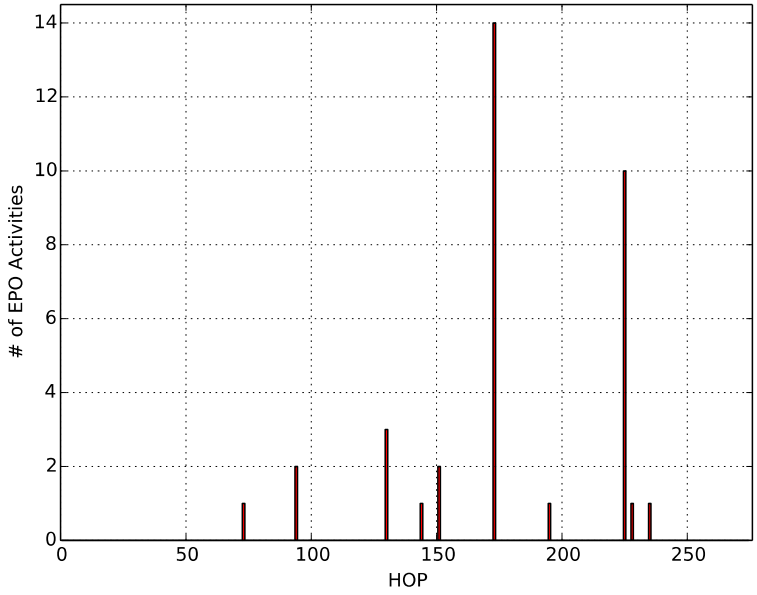


HOP Productivity Assessment: Outputs

Total EPO Per Year and Per HOP

- Star Performers: HOP 173 and Venus transit HOPs
- (included conference presentations for these HOPs as EPO due to their focus)
- Also includes theses
  -- *note that through this process, it was discovered that 2 theses are missing from the Hinode Thesis list for 2013 (just added yesterday after request)*

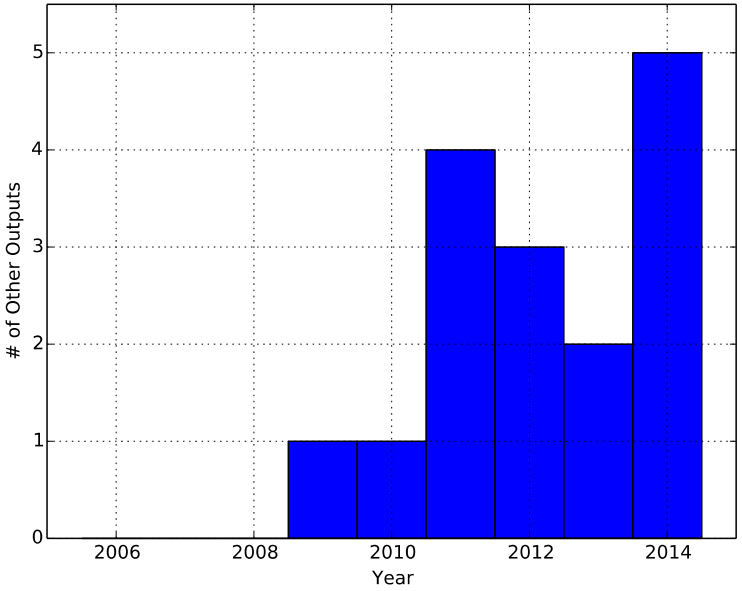


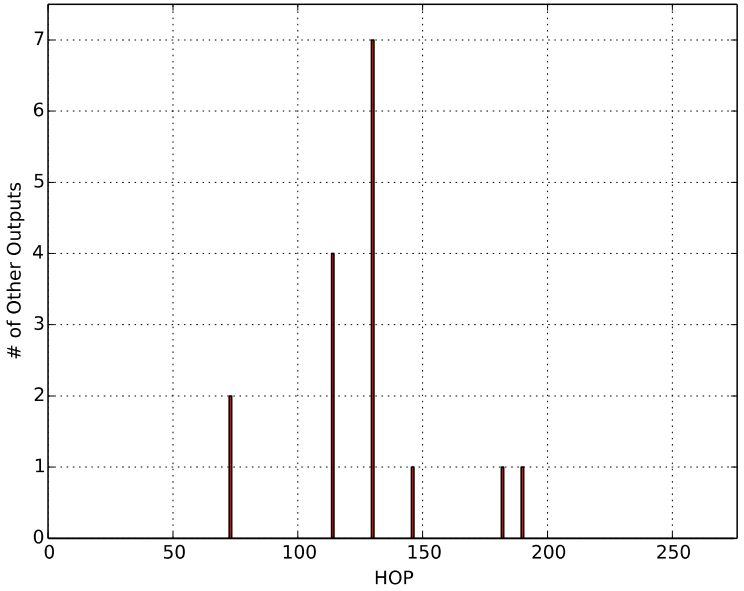


HOP Productivity Assessment: Outputs

Total Other Outputs Per Year and Per HOP

- e.g., conference presentations, animations, data collection
- not everyone reported these, so not precise





HOP Productivity Assessment: Assessment

- **What has worked well as a **HOP** (*based on the feedback received*)?**
  - Synoptic, long-term campaigns
  - Flux Emergence
  - Coronal Hole Boundaries / Solar Wind Origins
  - Prominences
  - EPO events (transits, eclipses, HOP173)
- Flares are difficult to plan for (obviously), so do not result in high yield as HOPs.
  - Exceptions!... (e.g., March 29, 2014 – have not received feedback on this flare.)
  - High risk/high reward
  - Typically result in active region monitoring which results in non-HOP research results.
- This information should feed into programs chosen during Focused Mode Operations.

HOP Productivity Assessment: Assessment

1. Assess the productivity of the HOP program.

- **Determine the best type of HOPs for Focused Mode Ops.**

- Recommendation based on current results:
  - Quiet Sun Conditions
    - Long-term synoptic programs / scans
    - Polar Coronal Hole magnetic field / solar wind origin monitoring
  - Active Sun Conditions
    - Active Region tracking
    - Flux emergence
  - High yield EPO activities, such as eclipses and transits, would warrant a pause in Focused Mode Ops due to complicated coordination efforts.

HOP Productivity Assessment: Assessment

2. Revisit guidelines for HOP approval by the Science Steering Committee (SSC).

- **Provide information to assess value of proposed HOPs and productivity of frequent proposers.**

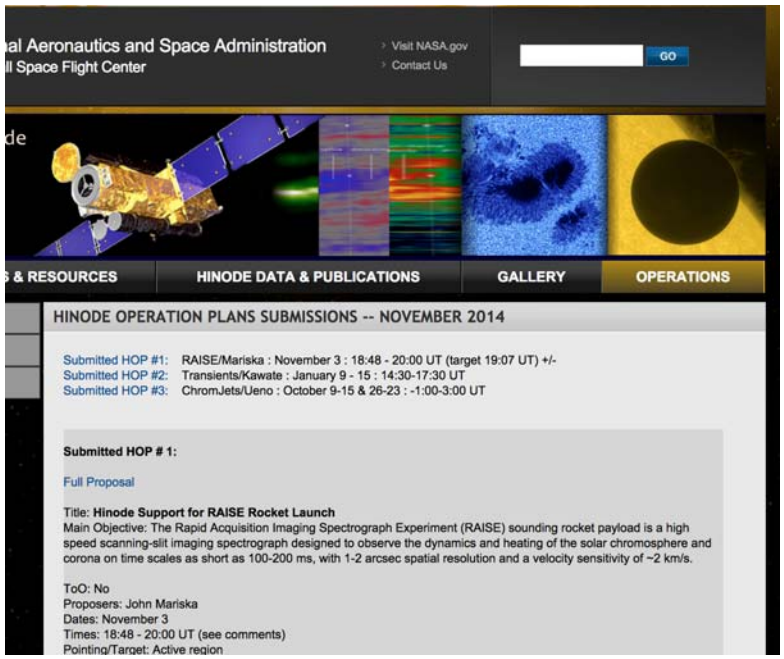
- Check against Proposer and HOP productivity.
- Proposers must check their status page(s) and update as necessary or provide justification for lack of outputs.
- Action [Savage/Watanabe]: Add this step to the submission guidelines.

HOP Productivity Assessment: Scheduling

3. Review scheduling procedure.

- During IRIS/Hinode non-eclipse season, requests for time go way up.
  - This is generally a positive indication of Hinode's value to the community.
  - Makes scheduling more difficult.
  - Potential to miss more flares.
- Website developed to reduce confusion and make scheduling more effective and clear.

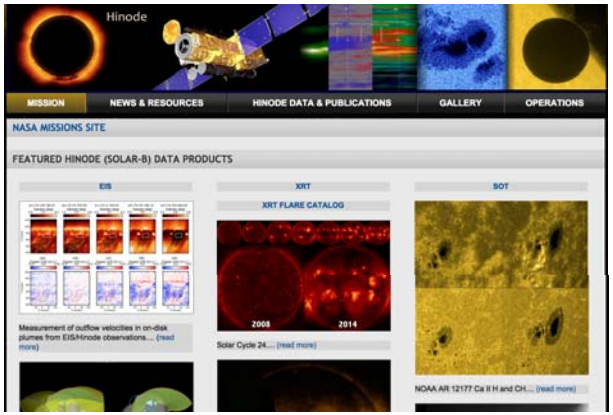
http://hinode.msfc.nasa.gov/submitted_hops.html

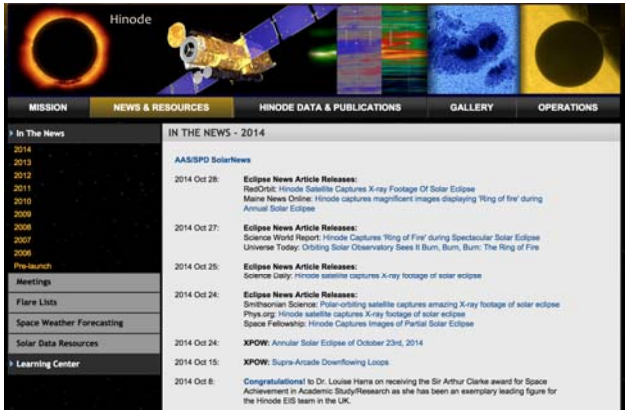


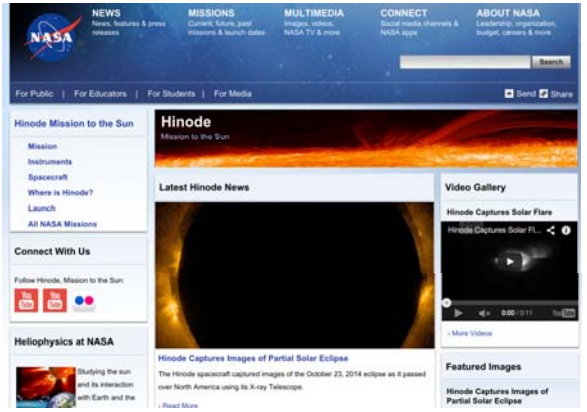
- Assessing productivity per HOP and per Proposer may reduce the number of HOPs approved, or hopefully, will instead encourage increased HOP productivity reporting.

4. Present science highlights

– PODs/XPOWs/Nuggets to MSFC main, MSFC News, and NASA mission sites







– Instrument teams have been providing examples of coordinated observations for review by NASA management.

- Compilation from the past year…